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IS 7485 (1985): Cross Recessed Countersunk Head Screws [PGD
31: Bolts, Nuts and Fasteners Accessories]

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

**SPECIFICATION FOR
CROSS RECESSED COUNTERSUNK HEAD SCREWS**
(First Revision)

"REF. 958
"REAFFIRMED 1990"

1. Scope — Covers the requirements for cross recessed countersunk head screws with thread sizes from M1.6 to M10.

2. Specifications and Reference Standards

Dimensions		Table 1		
Preferred length — size combinations		Table 2		
Tolerances		A		
Product grade		IS : 1367 (Part 2)-1979 ¹		
Tolerances		Indian Standard		
Pitch		Coarse		
Thread		6 g		
Tolerance		IS : 4218 (Part 5)-1979 ² IS : 4218 (Part 6)-1978 ³		
Cross recess		IS : 7478 ⁴		
Indian Standard		Steel	Stainless steel	Brass ⁴
Material		4.8	see Note	Min Tensile strength 300 MPa
Mechanical properties		IS : 1367 (Part 3)-1979 ⁵	IS : 1267 (Part 14)-1984 ⁷	
Property Class				
Indian Standards				

Note — As agreed to between the purchaser and the supplier.

¹ Technical supply conditions for threaded steel fasteners: Part 2 Product grades and tolerances (second revision).

² ISO metric screw threads: Part 5 Tolerances (first revision).

³ ISO metric screw threads: Part 6 Limits of sizes for commercial bolts and nuts (diameter range 1 to 52 mm) (first revision).

⁴ Unless otherwise specified the raw material for cross recessed countersunk head screws made from brass shall be either rolled, forged or extruded bars.

⁵ Dimensions for cross recesses (first revision).

⁶ Technical supply conditions for threaded steel fasteners: Part 3 Mechanical properties and test methods for bolts, screws and studs with full loadability (second revision).

⁷ Technical supply conditions for threaded steel fasteners: Part 14 Stainless steel threaded fasteners (second revision).

3. Designation

3.1 The cross recessed countersunk head screws shall be designated by the name, size, length and number of this standard.

Example:

A cross recessed countersunk head screw of size M8 and length 30 mm shall be designated as :

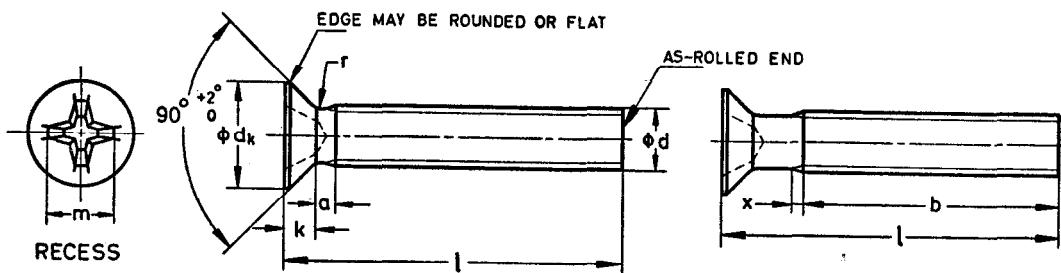
Recessed Countersunk Head Screw M8 × 30 — IS : 7485

3.2 When manufactured from brass or stainless steel, the word 'Brass' or 'Stainless Steel', as the case may be shall be added at the end of the designation.

TABLE 1 DIMENSIONS FOR CROSS RECESSED COUNTERSUNK HEAD SCREWS

(Clause 2)

All dimensions in millimetres.



Shank diameter is approximately equal to pitch diameter or equal to major diameter permissible.

x according to runout 'Normal' of IS : 1369-1982 'Dimensions for screw thread runouts and undercuts (second revision)'.

a according to runout distance 'Short' of IS : 1369-1982.

Thread Size d	M1.6	M2	M2.5	M3	(M3.5)	M 4	M 5	M 6	M 8	M 10
P (Pitch of Thread)	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5
b	25	25	25	25	38	38	38	38	38	38
dk	3.6	4.4	5.5	6.3	8.2	9.4	10.4	12.6	7.3	20
actual	Max	3	3.8	4.7	5.5	7.3	8.4	9.3	11.3	15.8
	Min	2.7	3.5	4.4	5.2	6.9	8	8.9	10.9	17.8
k		Max	1	1.2	1.5	1.65	2.35	2.7	3.3	4.65
r		Max	0.4	0.5	0.6	0.8	0.9	1	1.3	2
Cross recess	Recess No.		0		1		2		3	4
	m Ref	1.6	1.9	2.9	3.2	4.4	4.6	5.2	6.8	8.9
Penetration depth	Min	0.6	0.9	1.4	1.7	1.9	2.1	2.7	3	4
	Max	0.9	1.2	1.8	2.1	2.4	2.6	3.2	3.5	5.1

Note — The sizes given in brackets are non-preferred.

*See IS : 11362-1985 'Head configuration and gauging of countersunk head screws'.

4. Sampling — Sampling and criteria of acceptance shall be in accordance with IS : 2614 - 1969 'Methods for sampling of fasteners (first revision)'.

5. General Requirements

5.1 In regard to the surface discontinuities, the recessed countersunk head screws shall conform to IS : 1367 (Part 9)-1979 'Technical supply conditions for threaded steel fasteners : Part 9 Surface discontinuities on bolts, screws and studs (second revision)'.

5.2 The recessed countersunk head screws shall be of plain finish.

5.3 When cross recessed countersunk head screws are required to be zinc or cadmium plated, the requirements for electroplating shall be agreed to between the purchaser and the supplier.

5.4 In regard to the requirements not covered in this standard, the recessed countersunk head screws shall conform to IS : 1367 (Part 1)-1980 'Technical supply conditions for threaded steel fasteners : Part 1 Introduction and general information (second revision)'.

6. Marking and Mode of Delivery — The recessed countersunk head screws shall be marked and delivered in accordance with IS : 1367 (Part 18)-1979 'Technical supply conditions for threaded steel fasteners: Part 18 Marking and mode of delivery (second revision)'.

6.1 ISI Certification Marking — Details available with the Indian Standards Institution.

TABLE 2 PREFERRED LENGTH-SIZE COMBINATIONS FOR CROSS RECESSED COUNTERSUNK HEAD SCREWS

(Clause 2)

All dimensions in millimetres.

Nom	LENGTH l*		THREAD SIZE d									
	Min	Max	M 1.6	M 2	M 2.5	M 3	(M 3.5)	M 4	M 5	M 6	M 8	M 10
3	2.8	3.2										
4	3.7	4.3										
5	4.7	5.3										
6	5.7	6.3										
8	7.7	8.3										
10	9.7	10.3										
12	11.6	12.4										
(14)	13.6	14.4										
16	15.6	16.4										
20	19.6	20.4										
25	24.6	25.4										
30	29.6	30.4										
35	34.5	35.5										
40	39.5	40.5										
45	44.5	45.5										
50	49.5	50.5										
(55)	54	56										
60	59	61										

Note 1 — Sizes given in brackets are non-preferred.

Note 2 — Screws with nominal lengths above the stepped dotted line, are threaded up to head [$b = l - (k + a)$]

Note 3 — The preferred lengths are between the stepped bold lines.

*Min and Max values according to IS : 1367 (Part 2)-1979 'Technical supply conditions for threaded steel fasteners: Part 2 Product grades and tolerances (second revision)' but rounded off to one decimal place.

EXPLANATORY NOTE

This standard was originally published in 1974. The revision has been taken up to align the requirements of cross recessed countersunk head screws with the requirements adopted at the International level (ISO).

Tolerances for dimensions as well as of form and position, mechanical properties and general requirements have been updated in line with the latest revision of IS : 1367.

The cross recess specified in this standard is same as type 'H' Specified in ISO 4757-1983 'Cross recesses for screws' issued by International Organization for Standardization (ISO).

This standard is one of a series of standards on cross-recessed screws. The other standards of the series are :

IS : 7483-1985 Cross recessed pan head screws (*first revision*)

IS : 7486-1985 Cross recessed raised countersunk head screws (*first revision*)

Dimensions for cross recesses and recess penetration gauges are covered in IS : 7478-1985 and IS : 7479-1985, respectively.

In the preparation of this standard considerable assistance has been derived from ISO 7046-1983 'Cross recessed countersunk flat head screws (common head style)—Product grade A and property class 4.8 only' issued by International Organization for Standardization. All dimensions and preferred length size combinations covered in Tables 1 and 2 of this standard, respectively are in conformity with ISO 7046-1983.